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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/712,269	11/14/2003	Vernon R. Brethour	28549-198910	7955
26694	7590	12/13/2004	EXAMINER	
VENABLE, BAETJER, HOWARD AND CIVILETTI, LLP			DEPPE, BETSY LEE	
P.O. BOX 34385			ART UNIT	PAPER NUMBER
WASHINGTON, DC 20043-9998			2637	

DATE MAILED: 12/13/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/712,269

Applicant(s)

BRETHOUR ET AL.

Examiner

Betsy L. Deppe

Art Unit

2637

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 26 October 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 6-33 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 6-33 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 14 November 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 19 August 2004.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## **DETAILED ACTION**

### ***Drawings***

1. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the impulse radio receiver of claims 19-31 must be shown or the feature(s) canceled from the claim(s). Although Figure 7 shows an impulse radio receiver, it does not show the sampling circuitry, plurality of rake teeth and the figure of merit determination circuitry recited in claim 19 and its dependent claims. No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

### **Specification**

2. Applicant is reminded of the proper content of an abstract of the disclosure.

A patent abstract is a concise statement of the technical disclosure of the patent and should include that which is new in the art to which the invention pertains. If the patent is of a basic nature, the entire technical disclosure may be new in the art, and the abstract should be directed to the entire disclosure. If the patent is in the nature of an improvement in an old apparatus, process, product, or composition, the abstract should include the technical disclosure of the improvement. In certain patents, particularly those for compounds and compositions, wherein the process for making and/or the use thereof are not obvious, the abstract should set forth a process for making and/or use thereof. If the new technical disclosure involves modifications or alternatives, the abstract should mention by way of example the preferred modification or alternative.

The abstract should not refer to purported merits or speculative applications of the invention and should not compare the invention with the prior art.

Where applicable, the abstract should include the following:

- (1) if a machine or apparatus, its organization and operation;
- (2) if an article, its method of making;
- (3) if a chemical compound, its identity and use;
- (4) if a mixture, its ingredients;
- (5) if a process, the steps.

Extensive mechanical and design details of apparatus should not be given.

3. The abstract of the disclosure is objected to because it is referring to purported merits or speculative applications of the invention and does not describe the invention as claimed. Correction is required. See MPEP § 608.01(b).

4. The disclosure is objected to because of the following informalities:

on page 33, the last sentence is incomplete; and

on 95, first line after Table 21, "Fifo" should be "FIFO".

Appropriate correction is required.

5. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

***Claim Rejections - 35 USC § 112***

6. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

7. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

8. Claims 14-16, 18, 27-29 and 31 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

9. The detailed description does not appear to describe placing and determining time offsets in relation to the energy captured by at least one rake tooth, as recited in claims 14-16 and 27-29.

10. With regard to claims 18 and 31, the detailed description does not appear to describe determining an approximation of the variance of the samples as recited in claims 18 and 31, respectively. Although page 102 provides an equation for

determining the variance, the disclosure does not describe determining an **approximation** of the variance.

11. Claims 12-16 and 25-29 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

12. With regard to claims 14-16 and 27-29, claims 14 and 27 recite the limitation "the energy" in lines 1-2. There is insufficient antecedent basis for this limitation in the respective claims. Since claims 15, 16, 28 and 29 are dependent on claims 14 and 27, respectively, they are rejected under the same grounds.

13. With regard to claims 12,13, 25 and 26, it is unclear what is meant by confining the time offset of at least one rake tooth to a corresponding placement zone as recited in claims 12 and 25.

14. With regard to claims 19-31, it is unclear how the plurality of rake teeth in claim 19, lines 2-3 relates to the sampling circuitry in claim 19, line 2. For example is the sampling circuitry connected to or part of the plurality of rake teeth?

### ***Claim Rejections - 35 USC § 102***

15. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

16. Claims 6-11, 19-24, 32 and 33 are rejected under 35 U.S.C. 102(b) as being anticipated by Ono (US Patent No. 6,157,687).
17. With regard to claims 6 and 19, Ono teaches sampling circuitry (30) for sampling a plurality of impulse radio signal reflections (i.e. "paths") and figure of merit determination circuitry (31). (See the figure; column 3, line 35 - column 4, line 7 and column 4, lines 46-60)
18. With regard to claims 7 and 20, it is inherent/implicit that the output of the rake synthesizer is demodulated in order to recover the transmitted signal.
19. With regard to claims 8, 9, 21 and 22, Ono discloses excluding samples based on at least one figure of merit (SIR). (See the abstract and column 5, lines 30-50)
20. With regard to claims 10, 11, 23 and 24, Ono discloses updating the figure of merit and performing data demodulation computation based on an updated one of the at least one figure of merit. (See column 1, lines 53-58) It is inherent/implicit that the SIR is updated.
21. With regard to claim 32, Ono teaches receiving a plurality of impulse radio signal reflections (i.e. "paths"), sampling the plurality of impulse radio signal reflections (30), determining a plurality of figures of merit (SIR in 31), determining a best figure of merit (i.e. "threshold") and determining whether to exclude one of said plurality of rake teeth. (See the figure, abstract, column 3, line 35 - column 4, line 7 and column 4, lines 46-60; column 5, lines 30-57)
22. With regard to claim 33, it is inherent/implicit that the output of the rake synthesizer is demodulated in order to recover the transmitted signal.

***Claim Rejections - 35 USC § 103***

23. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

24. Claims 17, 18, 30 and 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ono as applied to claims 6 and 19, respectively, above, and further in view of Saints (US Patent No. 5,903,554). Ono discloses the claimed invention except for determining a figure of merit based on variance or an approximation of the variance of the samples. Figure 3 of Saints discloses calculating a noise value based on variance (step 110) and Figure 4 of Saints teaches estimating (i.e. "approximating") the noise value based on variance (step 152). (See column 4, lines 6-15 and column 5, line 66 - column 6, line 13). It would have been an obvious matter of design choice to one of ordinary skill in the art at the time the invention was made to use either of the noise calculations taught by Saints in the SIR estimator of Ono since the method of determining the noise does not affect the overall functionality or operation of Ono's rake receiving system. Whether a particular calculation method is used depends upon factors such as desired accuracy of the calculation versus power consumption/speed.

***Conclusion***


25. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Betsy L. Deppe whose telephone number is (571) 272-



3054. The examiner can normally be reached on Monday, Wednesday and Thursday (8:30-4:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jay Patel can be reached on (571) 272 - 2988. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
Betsy L. Deppe  
Primary Examiner  
Art Unit 2637